Mississippi National River and Recreation Area

(Minnesota)

About the Park

The Mississippi National River and Recreation Area (MNRRA) encompasses a 72-mile stretch of the Mississippi River in the Twin Cities metropolitan area of Minnesota. The park was established in 1988 to protect, preserve, and enhance the nationally-significant natural, cultural, economic and recreational values of the Mississippi River that are represented here. Despite its location in an urban area, the park boasts a wealth of natural resources, including the Mississippi River's only true waterfall, a robust bald eagle population, and a world-class fishery. It is also an important resource for the communities along it, and for the entire nation: the Mississippi River provides drinking water and hydropower, carries away treated waste, receives untreated runoff, and continues to serve as a commercial and recreational transportation corridor. The MNRRA includes 54,000 acres, of which the National Park Service owns only 64—meaning that partnerships with state, local, and private organizations are a key to the park's operations, and to the protection of the Mississippi River.

Mississippi River, Minneapolis, MN. Photo: National Park Service

How will climate change affect this Area?

Over the past several decades there has been a documented increase in average temperatures in Minnesota, most prominently during winter months. An increase in spring and summer storm events has been observed. Precipitation in the area has increased by approximately 20%, with resulting increases in river flows. While changes in precipitation are challenging to predict, the Union of Concerned Scientists (UCS) estimates that in future decades, winter precipitation will rise by 15-35% while summer precipitation will decrease by 15%. By the end of the century, this will combine with a 4-8 degree F temperature rise in the winter, and a 7-16 degree F temperature rise in the summer, making summers in Minnesota feel like present-day Kansas. (UCS)

Temperature and precipitation changes have many implications for fish, wildlife, plants and people along the Upper Mississippi River. Disease carrying insects such as mosquitoes and ticks, along with destructive pests such as the gypsy moths that attack forests, will be better able to

survive winters, and will likely appear in larger numbers. Non-native species such as reed canary grass, which tend to thrive under a wide range of conditions, will out-compete the native species that are adapted to a relatively narrow range of conditions. Animals, including reptiles, birds, mammals and amphibians will be competing with species moving northward as the area becomes warmer. While certain resident bird species may benefit from a warmer climate, other species – such as migratory songbirds that use the Mississippi flyway - will likely decline due to increased competition for food and resources, and find survival difficult. Warming temperatures will result in earlier arrival of migrant birds, earlier budding and flowering of plants, and earlier appearance of butterflies and other insects. As river temperatures warm, algae will be more abundant, and populations of fish species that require cool water will decrease.

Both floods and droughts are anticipated to increase, with heavier downpours followed by higher rates of evaporation – affecting river ecology as well as navigation and recreation. An increase in large rainstorms may increase runoff pollution and expand the "dead zone" in the Gulf of Mexico. Periods of both high and low water levels could create problems for river traffic such as barges and towboats. Flooding may restrict some recreational and educational uses of the river.

Pelicans (left), riverboat (right). Photos: National Park Service

What can we do?

The National Park Service (NPS) is working with partners to protect and restore habitats and natural hydrology in the Mississippi River corridor in order to improve ecosystem resiliency. The NPS monitors existing insect pests and invasive plants, and has increased efforts to control or eradicate such pests in order to maintain native plant communities that sustain wildlife. The NPS works with partners to educate people about climate change and how to reduce or mitigate its effects on the Mississippi River.

As individuals and communities we can conserve energy and reduce our "carbon footprint." Reducing home energy use, supporting renewable energy, using bikes and transit, driving less, planting trees and native plants, making a habit of "reduce/reuse/recycle," and eating a climate friendly diet (e.g., local, plant based, and less processed) are all ways to slow the rate of climate change. Improving and restoring wetlands, planting rain gardens and holding water on land so it can soak into the ground will help reduce flooding and improve local water quality.